AMENDMENTS TO THE CLAIMS

1. (Previously presented) A circuit comprising:

an active pull-up device coupled to a one-wire bus, wherein the active pull-up device is configured to decrease the transition time of a voltage signal on the one-wire bus transitioning from a first voltage level to a second, higher voltage level; and

a level shift circuit coupled to the active pull-up device to circuit ground, said level shift circuit providing a substantially constant reference voltage level different than said circuit ground, wherein the active pull-up device is configured to operate with respect to the constant reference voltage level for decreasing the transition time of said voltage signal.

2. (Currently amended) The circuit of claim 1 wherein the one-wire bus is a bi-directional one-wire bus for bi-directional communications, and the active pull-up device switches from a first impedance to a second, lower impedance when the voltage signal rises above a designated threshold voltage level between the first and second voltage levels, for decreasing said transition time of the voltage signal due to parasitic capacitances on the one-wire bus ~~voltage signal on the one-wire bus includes a bias signal equal to the reference voltage level~~.

3. (Currently amended) The circuit of claim 2 wherein:

the voltage signal on the one-wire bus includes a bias signal equal to the reference voltage level; and

the active pull-up device has a voltage sense switch that is coupled to the level shift circuit, said active pull-up device being configured to initiate the decrease of said transition time when the voltage sense switch determines that a measured level of the voltage signal has risen above ~~a~~ the designated threshold voltage level, said voltage signal being measured with respect to said reference voltage level.

4. (Currently amended) The circuit of ~~claim 1~~ claim 2 where the level shift circuit is a diode with its cathode connected to circuit ground and its anode connected to a reference connection point of the active pull-up device.

5. (Currently amended) The circuit of ~~claim 1~~ claim 2 further comprising:

at least one communication device coupled to the one-wire bus and configured to output said voltage signal for communicating over the one-wire bus, wherein the at least one communication device is configured to include a bias signal equal to the reference voltage level in the voltage signal.

6. (Previously presented) The circuit of claim 5 further comprising:

a transceiver having a processor, wherein the transceiver is coupled to the one wire bus and is configured to communicate with said at least one communication device over said one-wire bus, wherein communication signals generated by the transceiver are biased by said reference voltage level.

7. (Currently amended) A circuit comprising:

a level shift circuit connected to a circuit ground and configured to output a substantially constant reference voltage level different than said circuit ground; and

an active pull-up device coupled to the level shift circuit and to a one-wire bus for bi-directional communications, wherein the active pull-up device is configured to output a first designated voltage level on the one-wire bus when a measured voltage level of a communication signal on the bus rises above a second designated voltage level, said second voltage level being less than the first voltage level, said active pull-up device measuring the voltage level of the communication signal with respect to the constant reference voltage level; and

wherein the active pull-up device decreases a transition time of the communication signal on the one-wire bus transitioning from the second voltage level to the first voltage level.

8. (Currently amended) The circuit of claim 7 wherein:

the active pull-up device switches from a first impedance to a second, lower impedance when the measured voltage level of the communication signal on the bus rises above the second designated voltage level, for decreasing said transition time of the communication signal; and

the communication signal includes a bias signal equal to the reference voltage level.

9-10. (Cancelled)

11. (Previously presented) The circuit of claim 8 wherein the level shift circuit is a diode with its cathode connected to circuit ground and its anode connected to a reference connection point of the active pull-up device.

12. (Previously presented) The circuit of claim 7 further comprising:

at least one communication device coupled to the one-wire bus and configured to output said voltage signal for communicating over the one-wire bus, wherein the at least one communication device is configured to include a bias signal equal to the reference voltage level in the voltage signal.

13. (Previously presented) The circuit of claim 12 further comprising:

a transceiver having a processor, wherein the transceiver is coupled to the one wire bus and is configured to communicate with said at least one communication device over said one-wire bus, wherein communication signals generated by the transceiver are biased by said reference voltage level.

14. (Currently amended) A communication system comprising:

a one-wire bus for bi-directional communications;

a transceiver connected to the one-wire bus;

a communication device connected to the one wire-bus, wherein the communication device is configured to apply a voltage signal to the bus for communicating with the transceiver;

an active pull-up device connected to the one-wire bus and configured to ~~raise the voltage signal to a designated level~~ decrease the transition time of the voltage signal on the one-wire bus when transitioning from a first voltage level to a second, higher voltage level, when the voltage signal passes above a threshold level; and

a level shift circuit disposed between the active pull-up device and a circuit ground, said level shift circuit providing a substantially constant reference voltage level above or below said circuit ground, wherein the active pull-up device is configured to operate with respect to the constant reference voltage level ~~for raising the voltage signal to the designated level~~, and wherein the voltage signal applied by the communication device includes a bias voltage equal to said constant reference voltage level.